

TASKLY

INTERDISCIPLINARY PROJECT

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Technology degree in Information Technology

by

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SCHOOL OF COMPUTING

SATHYABAMA
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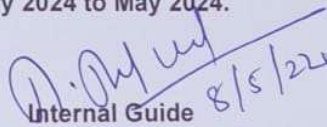
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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **LINGA PRAVIN K S** (41120101) who carried out the project entitled "**TASKLY**" under my supervision from **January 2024 to May 2024**.


Internal Guide

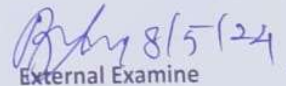
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I am pleased to acknowledge my sincere thanks to **Board of Management** of **SATHYABAMA** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

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CERTIFICATION OF COMPLETION



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During the internship, **LINGA PRAVIN** has closely worked as a part of the **Flutter** by carrying out the project entitled "**Taskly (Notes)**"

He demonstrated good developing and learning skill with self-motivated attitude to learn new things. His contribution to implement the Flutter was good. We wish him all the best for his future endeavors.

Best Regards,

Ravikumar S
CEO & Managing Director
Hackwit Technologies Pvt Ltd



CERTIFICATION OF COMPLETION



ABSTRACT

Taskly, a mobile application built with Flutter, emerges as a user-friendly companion for managing daily tasks. Shrouded in a customizable dark theme, the application prioritizes both aesthetics and user comfort. At its core lies a robust task management system, empowering users to effortlessly create, edit, and delete tasks. This functionality grants users complete control over their workload, enabling efficient organization and prioritization.

Furthermore, Taskly unlocks the potential for advanced task filtering. This feature empowers users to tailor their task view based on specific criteria, allowing them to focus on the most pressing matters at hand. By filtering tasks, users can significantly enhance their productivity and streamline their workflow.

Behind the scenes, Taskly leverages the power of Riverpod, a state management library. Riverpod ensures a centralized and structured approach to managing application data. This translates to a seamless user experience, where changes made in one part of the application are consistently reflected throughout. In essence, Taskly's architecture fosters a cohesive and intuitive experience for its users.

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CHAPTER 1

INTRODUCTION

This chapter provides a comprehensive introduction to the Taskly mobile application, its development framework, and the problem it aims to solve. It delves into the core technologies utilized in the application's construction and establishes the rationale behind its development.

1.1 Flutter

Flutter, an open-source UI framework developed by Google, serves as the cornerstone for Taskly's development. This versatile framework empowers developers to craft beautiful and high-performance user interfaces that seamlessly adapt across various mobile operating systems (iOS and Android) using a single codebase.

1.1.1 Embracing Efficiency with Hot Reload

One of Flutter's most compelling strengths lies in its hot reload functionality. This feature enables developers to witness the impact of code modifications almost instantaneously, significantly accelerating the development process. With hot reload, developers can make changes to the code and observe the corresponding UI updates within seconds, eliminating the need for lengthy app restarts. This iterative approach fosters a more efficient and productive development cycle.

1.1.2 A Declarative Paradigm for Simplified Development

Flutter adopts a declarative UI paradigm, a distinct approach where developers define the desired UI state rather than dictating low-level steps to achieve it. This approach simplifies development by allowing developers to focus on the "what" instead of the "how." Developers can describe the desired UI structure and appearance, and Flutter's rendering engine efficiently translates that description into visually stunning and interactive elements.

1.1.3 Captivating Visuals with Widgets and Material Design

Flutter boasts a rich ecosystem of pre-built widgets that serve as the building blocks for crafting user interfaces. These widgets offer functionalities ranging from fundamental UI elements like buttons and text fields to more intricate components like navigation drawers and scrolling lists. By leveraging these widgets, developers can rapidly construct complex and visually appealing UIs without the need to reinvent the wheel. Additionally, Flutter integrates seamlessly with Material Design, Google's design language, which provides a robust foundation for creating user-friendly and aesthetically pleasing interfaces that adhere to established design principles.

1.2 Dart: A Modern Language for Building High-Performance Apps

Dart, a versatile and object-oriented programming language developed by Google, serves as the foundation for building applications within the Flutter framework. This language offers several advantages that make it well-suited for mobile development.

1.2.1 AOT Compilation for Speedy Performance

Ahead-of-Time (AOT) compilation, a core feature of Dart, translates Dart code into machine code for the target platform (Android or iOS) during the build process. This compiled code executes directly on the device's processor, resulting in exceptional performance and responsiveness within the application. This optimization ensures that Taskly delivers a smooth and lag-free user experience.

1.2.2 Hot Reload's Empowering Partner: Stateful Hot Update

While hot reload expedites the development process by enabling rapid UI updates, Dart's stateful hot update functionality takes it a step further. This feature allows developers to introduce changes to the application's business logic (state management) while the app is running. This eliminates the need for

app restarts after making state-related code modifications, further streamlining the development workflow and enhancing developer productivity.

1.2.3 Strong Typing for Enhanced Code Maintainability

Dart enforces a strong typing system, which mandates that variables be declared with a specific data type (e.g., `int`, `String`). This approach fosters code clarity and maintainability by preventing runtime errors associated with unexpected data types. Additionally, strong typing empowers static code analysis tools to identify potential issues early in the development cycle, leading to a more robust and error-free codebase.

1.3 An Aside: Exploring Data Persistence Options

While the provided code snippets primarily focus on the application's UI and logic, it's worthwhile to briefly explore potential data persistence solutions that Taskly might employ for storing and retrieving task data. One commonly used option for mobile applications is SQLite.

1.3.1 SQLite: A Lightweight Solution for On-Device Data Storage

SQLite is a lightweight, embeddable relational database management system (RDBMS) that can be seamlessly integrated into mobile applications. It stores data in a structured format using tables and columns, enabling efficient data retrieval and manipulation. Due to its compact size and efficient resource usage, SQLite is particularly well-suited for mobile environments with limited storage capacity and processing power.

1.3.2 Key Advantages of SQLite for Taskly

If Taskly leverages SQLite for data persistence, it benefits from several key advantages:

Offline Functionality: With SQLite storing data locally on the device, Taskly can function even in the absence of an internet connection. Users can create, edit,

and manage their tasks seamlessly, and any changes are synchronized with the local database. This ensures uninterrupted productivity regardless of the user's network availability.

Efficient Data Management: SQLite offers efficient mechanisms for storing, retrieving, and manipulating task data. This translates to a responsive and performant user experience, where users can add, edit, and delete tasks without experiencing significant delays.

Simplified Integration: Integrating SQLite into Flutter applications is a relatively straightforward process. Several plugins and libraries facilitate seamless communication between the application and the local database, enabling developers to focus on core functionalities rather than low-level database interactions.

1.4 Problem Statement: The Juggling Act of Task Management

In today's fast-paced world, individuals juggle a multitude of tasks and responsibilities across various aspects of their lives. Managing these tasks effectively can be a daunting challenge, leading to stress, missed deadlines, and a feeling of overwhelm. Traditional methods of task management, such as pen-and-paper to-do lists or scattered digital notes, often prove inadequate in the face of ever-growing workloads.

1.4.1 The Inefficiencies of Manual Task Management

Manual task management systems, while seemingly simple, suffer from several shortcomings that hinder productivity and organization:

Limited Organization: Traditional methods often lack effective organizational structures, making it difficult to categorize and prioritize tasks. This can lead to a cluttered and overwhelming list, hindering the user's ability to focus on the most critical tasks.

Prone to Loss or Damage: Physical to-do lists are susceptible to loss or damage, jeopardizing valuable task information. Digital notes scattered across various applications can be challenging to locate and consolidate.

Ineffective Collaboration: Manual methods often make collaboration on tasks cumbersome. Sharing task lists or updates necessitates manual communication, which can be time-consuming and error-prone.

1.4.2 The Need for a Streamlined Solution

Taskly emerges in response to these inefficiencies, aiming to provide a user-friendly and comprehensive task management solution. By leveraging the capabilities of mobile technology, Taskly empowers users to streamline their workflow and achieve enhanced productivity.

1.5 Objectives: Fostering Organization and Efficiency

Taskly is driven by a set of core objectives that center around empowering users to effectively manage their tasks and achieve their goals. These objectives translate into a feature set designed to enhance organization, streamline workflow, and promote a sense of accomplishment.

1.5.1 Effortless Task Creation and Management

Taskly prioritizes the creation and management of tasks with a user-friendly interface. Users can effortlessly add new tasks, specifying details such as titles, descriptions, deadlines, and priorities. The application provides functionalities for editing and deleting tasks, ensuring that the task list remains current and reflects the user's evolving needs.

1.5.2 Tailored Organization with Task Filtering

Taskly equips users with the ability to filter and categorize tasks based on various criteria (e.g., priority, status, due date). This functionality empowers

users to focus on specific subsets of tasks, eliminating distractions and fostering a more focused approach to task completion.

1.5.3 Cultivating a Sense of Accomplishment

Taskly goes beyond simply managing tasks; it strives to motivate users and cultivate a sense of accomplishment. The application provides visual cues to track progress, potentially highlighting completed tasks and upcoming deadlines. This feedback mechanism helps users stay motivated and engaged in their task management journey.

1.5.4 Considerations for Data Validation

Data Type Validation: Taskly's data validation mechanisms should ensure that entered data conforms to the expected data types for each field. For instance, due dates might require validation to ensure they are valid dates and times, and priority levels might be restricted to a predefined set of options (e.g., high, medium, low). Enforcing data type validation safeguards against nonsensical or incompatible information being stored within the application.

Data Length Validation: Certain fields might have limitations on the length of the entered data. For example, task titles might require a minimum character length to provide sufficient context, while descriptions might have a maximum character limit to prevent excessively lengthy entries. Data length validation ensures that the application can effectively store and display the information within the user interface.

Regular Expressions: In specific scenarios, Taskly might leverage regular expressions for more complex data validation. Regular expressions are powerful tools for pattern matching within text strings. For instance, email address validation can be implemented using regular expressions to ensure that entered email addresses adhere to the standard format.

CHAPTER 2

METHODOLOGY

This chapter elucidates the comprehensive methodology applied in the development of Taskly, encompassing diverse facets such as requirements gathering, data flow, architecture, modules, development, and deployment. Each element was meticulously crafted to ensure the efficiency, scalability, and user-friendliness of the Taskly application.

2.1 Requirements

The journey of Taskly's development commenced with an exhaustive analysis of the requirements. This involved a deep dive into understanding the fundamental functionalities anticipated from a top-tier task management application. Taskly was envisioned to excel in task creation, categorization, prioritization, and tracking, all while maintaining a seamless user experience. To achieve this, Taskly needed to cater to a broad spectrum of users, ranging from casual task managers to professionals requiring intricate project management tools.

To gather these requirements, an array of methods was employed, including surveys, interviews, and an in-depth study of existing task management applications. User feedback emerged as a pivotal factor, providing invaluable insights into pain points and feature expectations. These requirements were meticulously documented, covering both functional and non-functional aspects, thereby serving as a foundational blueprint for the subsequent development stages.

2.1.1 User Stories

User stories were instrumental in encapsulating the requirements from the user's perspective. Each user story delineated a specific feature or functionality, its significance, and the anticipated outcome. This approach facilitated the prioritization of features based on user needs, thereby guiding the development trajectory effectively.

User stories were derived from extensive user research, ensuring that Taskly addressed real user needs and pain points. These stories were structured using the "As a [user], I want [feature] so that [benefit]" format, ensuring clarity and focus on user-centric outcomes. By prioritizing user stories, Taskly's development team could focus on delivering the most valuable features to users early in the development cycle.

2.1.2 Use Cases

Use cases were drafted to elucidate the interactions between users and the Taskly application. They outlined the sequential steps a user would undertake to accomplish a particular task, such as creating a new task, setting priorities, and marking tasks as completed. Use cases played a pivotal role in defining the application's scope and identifying potential challenges in user interactions.

Use cases were structured to include preconditions, triggers, main flows, alternate flows, and postconditions, providing a comprehensive view of user interactions. By defining these use cases early in the development process, Taskly's development team could ensure that the application met user expectations and functioned seamlessly across different scenarios.

2.1.3 Functional and Non-Functional Requirements

Functional requirements meticulously delineated the specific features and functionalities of Taskly, encompassing task creation, categorization, notification, and more. Non-functional requirements, on the other hand, focused on critical aspects like performance, scalability, security, and usability. These requirements were prioritized based on their criticality and impact on the user experience

Functional requirements were derived directly from user stories and use cases, ensuring that each feature addressed a specific user need or use case scenario. Non-functional requirements were defined to ensure that Taskly not only met user expectations but also adhered to industry standards and best practices.

2.1.4 Iterative Approach

Taskly's development embraced an iterative approach, enabling continuous feedback and refinement. This iterative process ensured that the application evolved in tandem with user needs and industry standards. Regular reviews and testing were conducted to validate the requirements and make necessary adjustments.

The iterative approach also allowed for the incorporation of new features and improvements based on user feedback and changing market trends. By continuously iterating on the application, Taskly's development team could ensure that it remained relevant and competitive in the dynamic task management market.

2.1.5 Stakeholder Involvement

Stakeholders, including users, developers, and project managers, were actively engaged throughout the requirements gathering phase. Their inputs and feedback were integrated into the requirements document, ensuring that Taskly resonated with their expectations and objectives.

Stakeholder involvement was crucial in ensuring the success of Taskly, as it ensured that the application met the needs of its target audience. By involving stakeholders early and often, Taskly's development team could build a sense of ownership and commitment among stakeholders, leading to a more successful and user-centric application.

2.2 Data Flow

The data flow architecture of Taskly plays a crucial role in ensuring the smooth and efficient operation of the application. It encompasses various components and processes that work together to manage task data effectively and provide users with a seamless experience. Let's delve deeper into the key aspects of Taskly's data flow architecture:

```
PS D:\codes\flutter\task\Taskly-master> flutter build apk
Resolving dependencies...
  cupertino_icons 1.0.5 (1.0.8 available)
  ffi 2.1.0 (2.1.2 available)
  flutter_lints 2.0.2 (3.0.2 available)
  flutter_riverpod 2.3.7 (2.5.1 available)
  js 0.6.7 (0.7.1 available)
  lints 2.1.1 (3.0.0 available)
```

Fig No 2.1 Code to build APK file

2.2.1 Task Creation and Categorization

Task creation is a fundamental feature of Taskly, allowing users to input new tasks into the system. When a user creates a task, Taskly captures essential details such as the task title, description, due date, and priority. This information is then used to categorize the task into one of the four main categories based on the Eisenhower Matrix.

Categorization is a critical step in task management, as it helps users prioritize their tasks effectively. By categorizing tasks into urgent important, urgent not important, not urgent important, and not urgent not important, Taskly provides users with a clear overview of their tasks and helps them focus on what matters most.

Fig No . 2.2 Types of task

2.2.2 Task Tracking and Monitoring

Task tracking and monitoring are essential aspects of Taskly's data flow architecture. Once a task is created, users can track its progress, mark it as completed, and update its details as needed. Taskly provides users with a visual representation of their tasks, including a timeline view, calendar view, and list view, making it easy to track and manage tasks.

Task tracking also includes notifications and reminders to keep users informed about upcoming tasks and deadlines. Taskly's notification system is highly

customizable, allowing users to set reminders based on their preferences and work habits. This ensures that users stay organized and on top of their tasks.

2.2.3 Data Storage and Management

Taskly's data storage and management are handled through a robust backend system. Task data is stored in a relational database, ensuring efficient data retrieval and management. The database is designed to scale with the application's growth, ensuring that Taskly can handle large volumes of data without compromising performance.

Data management also includes data synchronization across devices, ensuring that users can access their tasks from anywhere, at any time. This synchronization is achieved through cloud-based storage solutions, ensuring that user data is always up-to-date and accessible across devices.

2.2.4 Reporting and Analysis

Taskly provides reporting and analysis features through its analytics dashboard. This dashboard offers users insights into their task management habits, including task completion rates, average task duration, and more. These insights enable users to identify areas for improvement and optimize their task management strategies.

Reporting and analysis are instrumental in helping users identify patterns and trends in their task management habits. This information can be used to make informed decisions about task prioritization, time management, and overall productivity. Taskly's reporting and analysis features add a layer of intelligence to task management, empowering users to work smarter and more efficiently.

2.2.5 Accessibility and Security

Accessibility and security are top priorities in Taskly's data flow architecture. Taskly is designed to be accessible to users with diverse needs and preferences, ensuring a seamless user experience for all. Accessibility features such as screen reader support, keyboard navigation, and color contrast settings are integrated to ensure that Taskly is inclusive and user-friendly.

Security measures are also integrated into Taskly's data flow, ensuring the confidentiality and integrity of user data. This includes data encryption, secure authentication mechanisms, and regular security audits. Taskly's commitment to security ensures that user data is protected from unauthorized access and data breaches.

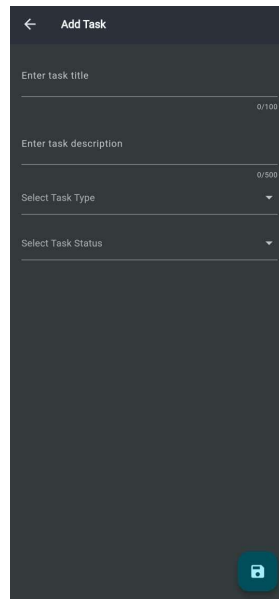
A screenshot of a mobile application interface for adding a task. The screen has a dark theme. At the top, there is a back arrow and the text 'Add Task'. Below this, there are four input fields: 'Enter task title' (with a character count of 0/100), 'Enter task description' (with a character count of 0/500), 'Select Task Type' (a dropdown menu), and 'Select Task Status' (a dropdown menu). At the bottom right corner, there is a teal circular button with a white padlock icon.

Fig No 2.3 Easy to access

2.3 Architecture

Taskly's architecture is a sophisticated framework meticulously crafted to offer a highly scalable, robust, and flexible foundation that underpins the application's functionality. It comprises several key components that synergize to deliver a seamless task management experience. Let's delve deeper into each component to understand how they contribute to Taskly's architecture.

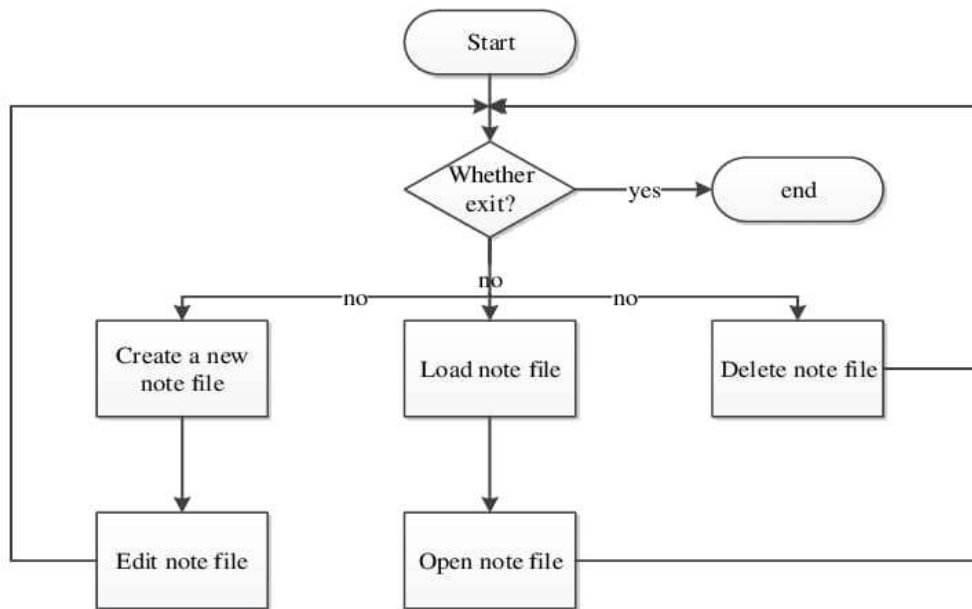


Fig No 2.4 Architecture Diagram

2.3.1 Client-Side Architecture

Taskly's client-side architecture is built using the Flutter framework, renowned for its ability to create beautiful, natively compiled applications for mobile, web, and desktop from a single codebase. This choice enables Taskly to offer a consistent user experience across different platforms while optimizing development efforts.

The architecture is structured into multiple layers, including the presentation layer, business logic layer, and data layer. This layered approach ensures a clear separation of concerns, making the codebase easier to maintain and scale.

Presentation Layer: Taskly's presentation layer is responsible for handling the user interface (UI) and user interactions. It consists of various widgets and components that render the UI elements, such as task lists, task details, and navigation menus. Flutter's reactive framework enables Taskly to provide a smooth and responsive UI, enhancing the user experience.

Business Logic Layer: The business logic layer contains the core logic of the application, including task management algorithms, data transformation

functions, and state management. Taskly leverages Riverpod for state management, a powerful tool that facilitates efficient data flow and updates across the application.

Data Layer: Taskly's data layer manages the interaction with external data sources, such as local databases and remote APIs. For local data storage, Taskly uses SQLite, a lightweight relational database, ensuring that task data is securely stored and accessible even when offline. Firebase is used for cloud-based data storage and synchronization, enabling seamless data synchronization across devices.

2.3.2 Server-Side Architecture

Taskly's server-side architecture is designed around a microservices architecture, which offers scalability and fault tolerance. The architecture consists of several independent services, each responsible for a specific task or functionality.

Authentication Service: The authentication service handles user authentication and authorization, ensuring that only authorized users can access Taskly's features and data. It provides secure authentication mechanisms, such as OAuth, to protect user accounts from unauthorized access.

Task Service: The task service manages task data, including task creation, deletion, and updates. It also handles task categorization and prioritization based on the Eisenhower Matrix, a popular time management tool. The task service ensures that tasks are organized and accessible to users based on their importance and urgency.

Notification Service: The notification service manages notifications and reminders for tasks, ensuring that users stay informed about upcoming deadlines and tasks. It provides timely reminders to help users stay on track with their tasks and deadlines.

Analytics Service: The analytics service provides analytics and reporting features, allowing users to gain insights into their task management habits and productivity. It collects and analyzes data related to task completion rates, time

spent on tasks, and overall productivity, helping users make informed decisions about their task management strategies.

2.3.3 Deployment Architecture

Taskly is deployed using a containerized approach, with Docker containers used to package and deploy the application and its dependencies. Kubernetes is used for orchestration, ensuring that Taskly can scale horizontally based on demand. The deployment architecture includes multiple environments, such as development, staging, and production, each with its configuration and settings.

Continuous integration and deployment (CI/CD) pipelines are used to automate the deployment process, ensuring fast and reliable releases. This approach allows Taskly to deliver new features and updates to users quickly and efficiently.

2.3.4 Security and Compliance

Security is paramount in Taskly's architecture, with measures in place to protect user data and ensure compliance with data protection regulations. Encryption is used to secure data both in transit and at rest, protecting it from unauthorized access. Secure authentication mechanisms, such as OAuth, are used to verify the identity of users and prevent unauthorized access to user accounts.

Taskly complies with relevant data protection regulations, such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA). Compliance with these regulations ensures that user data is handled responsibly and in accordance with legal requirements, fostering trust and confidence among users.

2.3.5 Scalability and Performance

Taskly's architecture is designed for scalability and performance, allowing it to handle a large number of users and tasks efficiently. The use of microservices architecture enables Taskly to scale individual components independently based on demand, ensuring optimal performance even during peak usage periods.

The architecture also includes caching mechanisms to reduce latency and improve response times. By caching frequently accessed data, Taskly can deliver content to users more quickly, enhancing the overall user experience.

2.4 Modules

Taskly's architecture is designed around a modular approach to ensure scalability, maintainability, and flexibility. The application is divided into several key modules, each responsible for distinct functionalities, ensuring a well-organized and efficient system.

2.4.1 Task Management Module

The Task Management Module is the heart of Taskly, providing users with tools to create, update, prioritize, and manage their tasks effectively.

Task Creation: Users can effortlessly create new tasks, specifying details such as title, description, due date, and priority level. Taskly ensures that tasks are created with the necessary information to facilitate efficient management.

Task Updating: Users can easily update existing tasks, modifying details such as descriptions, due dates, and priority levels. Taskly ensures that updates are reflected accurately across all platforms and devices.

Task Prioritization: Taskly incorporates the Eisenhower Matrix for task prioritization, allowing users to categorize tasks based on urgency and importance. This feature helps users focus on the most critical tasks first, enhancing productivity.

Task Categorization: Tasks can be categorized into different groups based on their nature, such as personal, work-related, or educational. Taskly provides users with the flexibility to organize their tasks according to their preferences.

2.4.2 User Authentication Module

The User Authentication Module manages user accounts, ensuring secure access to Taskly's features and functionalities.

User Registration: New users can create an account on Taskly by providing their email address and creating a password. Taskly verifies the email address to ensure the authenticity of the user.

User Login: Registered users can log in to Taskly using their email address and password. Taskly employs secure authentication mechanisms to protect user accounts from unauthorized access.

Password Management: Taskly allows users to reset their passwords in case they forget them. The password reset process involves verifying the user's identity through a secure verification method.

2.4.3 Notification Module

The Notification Module handles notifications and reminders, keeping users informed about upcoming tasks and deadlines.

Task Reminders: Taskly sends notifications to users about upcoming tasks and deadlines, helping them stay organized and on track. Users can customize the notification settings to receive reminders via email, SMS, or in-app notifications.

Notification Preferences: Taskly allows users to customize their notification preferences, specifying the types of notifications they want to receive and how they want to receive them. This feature ensures that users receive notifications in a way that is convenient for them.

2.4.4 Reporting and Analytics Module

The Reporting and Analytics Module provides users with insights into their task management habits and productivity levels, helping them make informed decisions.

Task Analytics: Taskly provides users with analytics on their task completion rates, categorization trends, and productivity levels. This information helps users identify areas for improvement and optimize their task management strategies.

Productivity Insights: Taskly's productivity insights provide users with valuable information on how they spend their time and how it affects their overall

productivity. Users can use this information to make adjustments to their task management approach and improve their efficiency.

2.4.5 Collaboration Module

The Collaboration Module enables users to collaborate with others on tasks and projects, enhancing teamwork and productivity.

Task Sharing: Taskly allows users to share tasks with other users, enabling collaboration on shared projects. Users can assign tasks to team members and track their progress in real-time.

Team Communication: Taskly provides built-in communication tools, such as chat and commenting features, to facilitate communication among team members. This feature ensures that team members can easily collaborate and discuss tasks without leaving the application.

Taskly's modular architecture ensures that the application remains flexible and adaptable to changing user needs. Each module is designed to work independently, allowing for easy integration of new features and enhancements. This approach ensures that Taskly remains a reliable and efficient task management tool for users.

2.5 Development and Deployment

The development and deployment process of Taskly involves several key stages, including planning, implementation, testing, and deployment. Each stage is crucial for ensuring the successful development and launch of the application.

2.5.1 Planning

The planning stage is the foundation of the development process, where the project scope, requirements, and timeline are defined. During this stage, the development team works closely with stakeholders to gather requirements and create a detailed project plan.

Requirement Gathering: The development team collaborates with stakeholders to gather and analyze requirements for the application. This involves identifying key features, functionality, and user expectations.

Project Scope Definition: Based on the requirements gathered, the project scope is defined, outlining the features and functionalities that will be included in the application. The scope also includes the timeline and budget for the project.

Timeline and Milestone Planning: A detailed timeline is created, outlining the milestones and deliverables for each stage of the development process. This helps ensure that the project stays on track and is completed within the specified timeline.

2.5.2 Implementation

The implementation stage involves the actual development of the application, where the development team works on coding, testing, and integrating the various components of the application.

Frontend Development: The frontend development team works on designing and developing the user interface of the application. This involves creating wireframes, mockups, and UI designs that are visually appealing and user-friendly.

Backend Development: The backend development team focuses on developing the server-side logic and database architecture of the application. This involves writing code in languages such as Java, Python, or Node.js, and setting up databases to store and retrieve data.

Integration and Testing: As the development progresses, the various components of the application are integrated and tested to ensure they work together seamlessly. This involves both manual and automated testing to identify and fix any bugs or issues.

2.5.3 Testing

The testing stage is crucial for ensuring the quality and reliability of the application. During this stage, the application is rigorously tested to identify and fix any bugs or issues before deployment.

Unit Testing: Unit tests are conducted to test individual components or units of code to ensure they work as expected. This helps identify and fix any issues at an early stage of development.

Integration Testing: Integration tests are conducted to test the integration of different components of the application to ensure they work together correctly. This helps identify and fix any issues related to the interaction between components.

User Acceptance Testing (UAT): UAT is conducted to test the application from the end user's perspective to ensure it meets their requirements and expectations. This helps identify any usability issues or areas for improvement.

2.5.4 Deployment

The deployment stage involves deploying the application to a live environment where it can be accessed by users. This stage requires careful planning and coordination to ensure a smooth and successful deployment process.

Environment Setup: The deployment environment is set up, including servers, databases, and other infrastructure required to host the application.

Deployment Process: The application is deployed to the live environment following a predefined deployment process. This process includes steps such as code deployment, database migration, and configuration setup.

Monitoring and Maintenance: After deployment, the application is monitored for performance, security, and other issues. Regular maintenance and updates are performed to ensure the application remains stable and secure.

CHAPTER 3

RESULT AND DISCUSSION

In this section, we delve into the detailed features and functionalities of Taskly, analyzing its potential impact and applications in various settings.

3.1 Features Overview

Task Creation and Organization: Taskly offers a user-friendly interface for creating and organizing tasks. Users can easily add new tasks, set due dates, and categorize them for better management.

3.1.1 Task Creation and Organization

Taskly offers a user-friendly interface for creating and organizing tasks. Users can easily add new tasks, set due dates, and categorize them for better management. The ability to create tasks efficiently helps users capture their thoughts and responsibilities quickly.

3.1.2 Priority Setting

Taskly allows users to prioritize tasks based on urgency and importance. This feature helps users focus on critical tasks and ensures they are completed on time. By categorizing tasks into different priority levels, users can better manage their workload and ensure that important tasks are not overlooked.

3.1.3 Reminders and Notifications

Taskly provides customizable reminders and notifications to keep users informed about upcoming tasks and deadlines. This feature helps users stay on track and avoid missing important deadlines. Users can set reminders for specific tasks or deadlines, ensuring that they are always aware of what needs to be done.

3.1.4 Progress Tracking

Taskly enables users to track the progress of their tasks. Users can see which tasks are completed, in progress, or overdue, allowing them to manage their workload effectively. The progress tracking feature provides users with a clear overview of their tasks, helping them stay organized and focused.

3.1.5 Collaboration and Sharing

Taskly supports collaboration by allowing users to share tasks with team members. Users can assign tasks, set deadlines, and track progress collaboratively. This feature is particularly useful for teams working on projects, as it ensures that everyone is on the same page and aware of their responsibilities.

3.1.6 Data Synchronization

Taskly syncs data across devices, ensuring that users have access to their tasks from anywhere. This feature is especially useful for users who switch between multiple devices. By syncing data, Taskly ensures that users can access their tasks whether they are using a computer, tablet, or smartphone.

3.2 Functionality

Taskly offers a range of functionalities to enhance task management:

3.2.1 Task Creation and Management

Create Tasks: Users can easily create new tasks, specifying details such as title, description, due date, and priority.

Task Organization: Tasks can be organized into different categories or lists, making it easier for users to manage and prioritize their tasks.

3.2.2 Priority Setting and Sorting

Priority Levels: Users can assign priority levels to tasks, such as high, medium, or low, to indicate their importance.

Sorting: Tasks can be sorted based on priority, due date, or status, helping users focus on the most critical tasks.

3.2.3 Reminders and Notifications

Customizable Reminders: Users can set reminders for tasks, ensuring they are notified before the task's due date.

Notifications: Taskly sends notifications to users, reminding them of upcoming tasks or deadlines.

3.2.4 Progress Tracking

Task Status: Users can track the status of tasks, such as completed, in progress, or overdue, providing a clear overview of their workload.

Progress Visualization: Taskly provides visual representations of task progress, such as progress bars or completion percentages.

3.2.5 Collaboration and Sharing

Task Sharing: Users can share tasks with others, enabling collaboration on shared projects or tasks.

Assignment: Tasks can be assigned to specific users, ensuring clear ownership and accountability.

3.2.6 Data Synchronization

Cross-Device Sync: Taskly synchronizes data across devices, ensuring that users have access to their tasks from any device.

Offline Access: Users can access and manage tasks even when offline, with changes syncing once an internet connection is established.

3.2.7 Reporting and Analytics

Task Insights: Taskly provides insights into task completion rates, overdue tasks, and productivity trends, helping users identify areas for improvement.

Custom Reports: Users can generate custom reports based on task data, allowing for in-depth analysis and decision-making.

3.2.8 Integration and Customization

Integration: Taskly integrates with other tools and platforms, such as calendars or project management software, enhancing its functionality.

Customization: Users can customize Taskly to suit their preferences, such as changing themes or settings, making it a personalized task management solution.

3.2.9 Security and Privacy

Data Encryption: Taskly uses encryption to secure user data, ensuring that sensitive information is protected.

Privacy Controls: Users have control over their privacy settings, such as who can view or edit their tasks, enhancing data security.

3.2.10 Accessibility and Usability

Accessibility Features: Taskly includes features to enhance accessibility, such as screen reader support or keyboard shortcuts, ensuring usability for all users.

User-Friendly Interface: Taskly has a user-friendly interface, making it easy for users to navigate and use its features efficiently.

3.2.11 Customer Support and Updates

Customer Support: Taskly provides customer support to assist users with any issues or queries they may have.

Regular Updates: Taskly receives regular updates, introducing new features and improvements based on user feedback and industry trends.

3.2.12 Offline Functionality

Offline Access: Users can access and manage tasks even when offline, with changes syncing once an internet connection is established.

Offline Sync: Taskly automatically syncs data with the server once an internet connection is available, ensuring data consistency across devices.

3.3 Potential Applications

Taskly has the potential to be used in various settings and industries:

3.3.1 Personal Task Management

Taskly can be used by individuals to manage their personal tasks, such as daily chores, work assignments, or personal projects. It helps users stay organized, prioritize tasks, and track progress.

3.3.2 Project Management

Teams can use Taskly for project management, enabling collaboration, task assignment, and progress tracking. It helps teams stay aligned, meet deadlines, and achieve project goals efficiently.

3.3.3 Educational Use

Students and educators can use Taskly to manage academic tasks, such as assignments, exams, and projects. It helps students stay on top of their studies and manage their time effectively.

3.3.4 Business Task Management

Taskly can be used by businesses to manage tasks, projects, and deadlines. It helps improve team collaboration, productivity, and overall project management efficiency.

3.3.5 Event Planning

Event planners can use Taskly to manage event-related tasks, such as venue booking, vendor coordination, and guest management. It helps streamline the planning process and ensure a successful event.

3.3.6 Time Management

Taskly can be used as a time management tool, helping individuals track their time spent on tasks, identify time-wasting activities, and improve overall productivity.

CHAPTER 4

CONCLUSION AND FUTURE WORK

4.1 CONCLUSION

In conclusion, Taskly offers a comprehensive and user-friendly solution for task management, catering to individuals, teams, and businesses alike. Its intuitive interface, coupled with robust features, makes it a valuable tool for enhancing productivity and efficiency. By providing a platform for organizing tasks, setting priorities, and tracking progress, Taskly empowers users to manage their workload effectively and achieve their goals.

Furthermore, Taskly's flexibility and scalability make it adaptable to various use cases, including personal task management, project management, and team collaboration. Its ability to integrate seamlessly into existing workflows and its customizable features ensure that it meets the diverse needs of users across different domains. Whether used for simple to-do lists or complex project management, Taskly proves to be a versatile and reliable tool.

Overall, Taskly stands out as a reliable and feature-rich task management solution, offering a blend of functionality and simplicity. With its range of features, including task categorization, deadline tracking, and progress monitoring, Taskly proves to be a valuable asset for individuals and teams seeking to enhance their productivity and achieve their objectives.

Looking ahead, there are several potential areas for further improvement and expansion of Taskley. These include the implementation of additional features such as collaborative note-taking, advanced search capabilities, and integration with other productivity tools. By continuing to innovate and respond to user feedback, Taskley has the potential to further establish itself as a leading note-taking app in the market.

4.2 FUTURE WORK

Enhanced Collaboration Features: Introducing more collaborative features, such as real-time editing, comments, and notifications, could make Taskly even more valuable for teams working together on projects.

Integration with Third-Party Apps: Adding integrations with popular third-party apps and services, such as Google Calendar, Slack, and Trello, could enhance Taskly's functionality and make it a more versatile tool for users.

Advanced Reporting and Analytics: Implementing advanced reporting and analytics features could help users gain deeper insights into their tasks and productivity, allowing them to identify patterns and optimize their workflow.

Mobile App Development: While Taskly currently offers a web-based platform, developing a mobile app for iOS and Android devices could significantly increase its accessibility and convenience for users on the go.

Automation and AI Features: Integrating automation and artificial intelligence features, such as task prioritization based on deadlines and user behavior analysis, could further streamline task management and improve efficiency.

Enhanced Security and Privacy Features: Strengthening security measures and adding more privacy options, such as end-to-end encryption for sensitive data, could help enhance user trust and confidence in Taskly.

Ensure that Taskly is accessible to users with disabilities by implementing features such as screen reader support, keyboard navigation, and high contrast modes. Implement additional security measures, such as end-to-end encryption, to protect user data and ensure user privacy.

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APPENDICES

A. Sample Code

main.dart

```
import 'package:flutter/material.dart';
import 'package:flutter_riverpod/flutter_riverpod.dart';
import
'package:taskly/presentation/feature/splash/screens/splash_screen.dar
t';

Future main() async {
  runApp(const ProviderScope(child: TasklyApp()));
}

class TasklyApp extends StatelessWidget {
  const TasklyApp({super.key});

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      theme: ThemeData.dark().copyWith(
        useMaterial3: true,
        colorScheme: ColorScheme.fromSeed(
          seedColor: const Color.fromARGB(255, 147, 229, 250),
          brightness: Brightness.dark,
          surface: const Color.fromARGB(255, 42, 51, 59),
        ),
        scaffoldBackgroundColor: const Color.fromARGB(255, 50, 58,
60),
      ),
      home: const SplashScreen(),
    );
  }
}
```

pubspec.yaml

```
name: taskly
description: A new Flutter project.

publish_to: 'none' # Remove this line if you wish to publish to
pub.dev

version: 1.0.0+1

environment:
  sdk: '>=3.1.0 <4.0.0'

dependencies:
  flutter:
    sdk: flutter

  cupertino_icons: ^1.0.2
  flutter_riverpod: ^2.3.7
  uuid: ^3.0.7
```

```

sqflite: ^2.3.0
sqflite_common_ffi: ^2.3.0+2
scrollable_positioned_list: ^0.3.8

dev_dependencies:
  flutter_test:
    sdk: flutter

  flutter_lints: ^2.0.0

flutter:
  uses-material-design: true

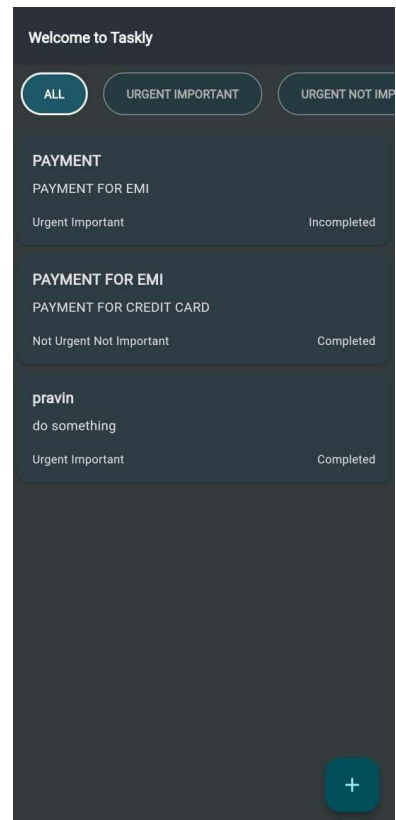
  assets:
    - assets/images/app-logo.png

```

B. Screen shot



Home Page



Splash Screen